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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,953	03/22/2005	Roger Krahenbuhl	0115-050642	9157

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EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/528,953	Applicant(s) KRAHENBUHL ET AL.	
	Examiner Sung H. Pak	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2006.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-39 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 21-39 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/13/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

Information disclosure statement filed 4/13/2006 has been considered.

Response to Amendment

Applicant's amendment filed 4/13/2006 has been entered. All pending claims have been carefully reviewed and reconsidered in view of the amendment and the accompanying arguments for patentability. However, the pending claims remain unpatentable and the claims are finally rejected over the prior art cited in the previous office action. Although the ground of rejection has been changed in this office action, such change was necessitated by the amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-24, 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyomasu et al (US 5,684,903) in view of DeAndrea et al (US 5,708,743).

Kyomasu patent discloses: a connector for detachable connection of at least one optical waveguide to at least one optoelectronic component which is arranged on the surface of a support, and which has an optical axis perpendicular to the support, wherein: the optical

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waveguide include a fiber-optic plug (Fig. 1B); and the connector includes a base part ('10' Fig. 1B) which is fasten to the surface of the support ('10c' Fig. 1B); surrounding the optoelectronic component ('50' Fig. 1B); and which has a through hole ('10z' Fig. 1B) for optical signal to be exchanged between the optoelectronic component and the optical waveguide; and a coupling part ('20' Fig. 1C) which is *exclusively mounted* to the base part facing outward and which has an insertion opening for the insertion of the fiber optic plug connector (Fig. 1C, Fig. 6E);

wherein the base part comprises a plate ('10a' Fig. 1C) which extends transversely to the direction of the insertion of the fiber optic plug, which can be connected on one side to the coupling part (Fig. 1C); and which has on the other side an adapter ('10f' Fig. 1C) with which the base part can be placed onto the support;

wherein the fiber optic plug includes: a ferrule in which the optical waveguide ends ('500b' Fig. 6E); a ferrule holder for receiving the ferrule when the plug connector is inserted on the base part ('30' Fig. 6E); the ferrule holder provided on the side of the plate opposite the adapter, whereupon the through hole opens out into the ferrule holder (Fig 6E);

wherein the ferrule holder protrudes into the coupling part (Fig. 6E);

wherein the adapter and the ferrule holder are part of a one-piece insert ('10' Fig. 6E);

further including a focusing lens arranged at the entry of the through hole (SELFOC lens '40' Fig. 6E);

wherein the plate of the base part is arranged parallel to the support (Fig. 6E); and the thorough hole and the insertion opening run in the direction of the optical axis of the optoelectronic component (Fig. 6E); wherein the adapter is formed in a cylinder manner (Figs. 2A-2B).

However, Kyomasu reference does not explicitly state that the optoelectronic component is electrically contacted as a chip on the surface of the support. On the other hand, the use of an optoelectronic component that is electrically contacted as a chip on a device support is well known and common in the art. DeAndrea reference cited in the previous office action clearly teaches such optoelectronic component electrically contacted as a chip on a device support ('30').

Further, DeAndrea discloses an optical device with nearly all limitations set forth in the claims, including: a connector for detachable connection of at least one optical waveguide to at least one optoelectronic component which is arranged on the surface of the support, and which has an optical axis perpendicular to the support (Fig. 13); wherein: the optical waveguide includes a fiber-optic plug connector (column 2 lines 49-63); the connector includes a base part which is fastened on the surface of the support ('150' Figs. 13-14); surrounding the optoelectronic component ('30' Fig. 13-14); and which has a through hole for optical signal to be exchanged between the optoelectronic component and the optical waveguide ('125' Fig. 13; '175' Fig. 14); and a coupling part ('40/70' Fig. 13-14) which is coupled to the base part facing outward and which has an insertion opening ('76' Fig. 13-14) for the insertion of the fiber optic plug connector;

wherein the base part comprises a plate ('80, 81' Fig. 13) which extends transversely to the direction of the insertion of the fiber optic plug, which can be connected on one side to the coupling part and which has on the other side an adapter ('100' Fig. 13) with which the base part can be placed onto the support;

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wherein the plate of the base part is arranged perpendicular to the support (Fig. 13); the through hole and the insertion opening runs parallel to the circuit board (Fig. 13); and the connector further includes means for the orthogonal deflection of the light rays passing between the optoelectronic component and the optical waveguide in the adapter ('310' Fig. 12-13);

wherein the deflecting means includes a hemispherical lens ('340' Fig. 12) and a planar reflecting surface ('310' Fig. 12).

The optoelectronic component electrically contacted as a chip, as shown in DeAndrea, is well known to be advantageous and desirable because it is much smaller in size compared to non-chip configuration and allows for compact optoelectronic optical communications module. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Kyomasu to have an optoelectronic component electrically contacted as a chip on the surface of the device support as taught by DeAndrea.

Claims 25-32 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyomasu et al (US 5,684,903) and DeAndrea et al (US 5,708,743).

Regarding claims 25-32, Kyomasu reference, in view of DeAndrea reference, renders claimed limitations obvious as discussed above. However, Kyomasu does not explicitly teach the use of the one-piece insert inserted through a separate plate component. However, the use of additional 'plate' or flange component is well known and common in the optoelectronic package art. Such plate or flange component connected to the ferrule holder element is considered advantageous and desirable in the art because it allows for precise and accurate alignment and

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mechanical coupling of fiber optic plug with optoelectronic housing. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Kyomasu to have a separate plate element coupled with the one-piece insert for better optical plug coupling.

Regarding claim 39, Kyomasu reference, in view of DeAndrea reference, renders claimed limitations obvious as discussed above. However, Kyomasu does not explicitly teach the use of a VCSEL as the light emitting laser. On the other hand, VCSELs are well known and common in the art. VCSELs are advantageously used because it has the ability to produce a circular, low-divergence output beam in a perpendicular direction, which simplifies or even eliminates the need for complex light focus optics in many applications. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Kyomasu to have VCSEL as the light emitting laser.

Response to Arguments

Applicant's arguments with respect to pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sung H. Pak
Primary Patent Examiner
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